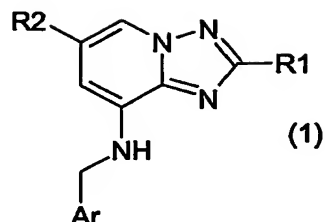


Claims

1. A compound of the formula 1



in which

R1 is hydrogen, 1-4C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkyl-1-4C-alkyl, 1-4C-alkoxy, 1-4C-alkoxy-1-4C-alkyl, 1-4C-alkoxycarbonyl, 2-4C-alkenyl, 2-4C-alkynyl, fluoro-1-4C-alkyl or hydroxy-1-4C-alkyl,

R2 is halogen, fluoro-1-4C-alkyl, 2-4C-alkenyl, 2-4C-alkynyl, carboxyl, cyano, 1-4C-alkoxycarbonyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkoxy-1-4C-alkyl, fluoro-1-4C-alkoxy-1-4C-alkyl, amino-1-4C-alkyl, mono- or di-1-4C-alkylamino-1-4C-alkyl, the radical Res-1-4C-alkyl or the radical -CO-NR31R32,

where

Res is a imidazo, morpholino, aziridino, azetidino, pyrrolidino, pyrrolo, piperidino, piperazino or a with R30 substituted benzylamino radical and the radical Res is bonded via its nitrogen atom or one of its nitrogen atoms to the 1-4C-alkyl radical

where

R30 is 1-4C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy, 2-4C-alkenyloxy, 1-4C-alkylcarbonyl, carboxy, 1-4C-alkoxycarbonyl, carboxy-1-4C-alkyl, 1-4C-alkoxycarbonyl-1-4C-alkyl, halogen or hydroxy,

R31 is hydrogen, hydroxyl, 1-7C-alkyl, hydroxy-1-4C-alkyl or 1-4C-alkoxy-1-4C-alkyl and

R32 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl or 1-4C-alkoxy-1-4C-alkyl,

or where

R31 and R32 together, including the nitrogen atom to which both are bonded, are a pyrrolidino, piperidino, piperazino, N-1-4C-alkylpiperazino, morpholino, aziridino or azetidino group,

Ar is one with R4, R5, R6 and R7 substituted mono- or bicyclic aromatic residue from the group of phenyl, naphthyl, pyrrolyl, pyrazolyl, imidazolyl, 1,2,3-triazolyl, indolyl, benzimidazolyl, furyl, benzofuryl, thienyl, benzothienyl, thiazolyl, isoxazolyl, pyridinyl, pyrimidinyl, chinolinyl and isochinolinyl,

wherein

R4 is hydrogen, 1-4C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy, 2-4C-alkenyloxy, 1-4C-alkylcarbonyl, carboxy, 1-4C-alkoxycarbonyl, carboxy-1-4C-alkyl, 1-4C-alkoxycarbonyl-1-4C-alkyl, halogen, hydroxy, aryl, aryl-1-4C-alkyl, aryl-oxy, aryl-1-4C-alkoxy, fluoro-1-

4C-alkyl, nitro, amino, mono- or di-1-4C-alkylamino, 1-4C-alkylcarbonylamino, 1-4C-alkoxycarbonylamino, 1-4C-alkoxy-1-4C-alkoxycarbonylamino or sulfonyl,

R5 is hydrogen, 1-4C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy, 2-4C-alkenyloxy, 1-4C-alkylcarbonyl, carboxy, 1-4C-alkoxycarbonyl, carboxy-1-4C-alkyl, 1-4C-alkoxycarbonyl-1-4C-alkyl, halogen, hydroxy, aryl, aryl-1-4C-alkyl, aryl-oxy, aryl-1-4C-alkoxy, fluoro-1-4C-alkyl, nitro, amino, mono- or di-1-4C-alkylamino, 1-4C-alkylcarbonylamino, 1-4C-alkoxycarbonylamino, 1-4C-alkoxy-1-4C-alkoxycarbonylamino or sulfonyl

R6 is hydrogen, 1-4C-alkyl or halogen and

R7 is hydrogen, 1-4C-alkyl or halogen,

wherein

aryl is phenyl or substituted phenyl with one, two or three same or different substituents from the group of 1-4C-alkyl, 1-4C-alkoxy, carboxy, 1-4C-alkoxycarbonyl, halogen, trifluoromethyl, nitro, trifluoromethoxy, hydroxy and cyano.

with the proviso that R1 does not have the meaning hydrogen, 1-4C-alkyl or hydroxy-1-4C-alkyl when R2 has the meaning halogen or fluoro-1-4C-alkyl, and its salts.

2. A compound of the formula 1 as claimed in claim 1, in which

R1 is hydrogen, 1-4C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkyl-1-4C-alkyl, 1-4C-alkoxy, 1-4C-alkoxy-1-4C-alkyl, 1-4C-alkoxycarbonyl, 2-4C-alkenyl, 2-4C-alkynyl, fluoro-1-4C-alkyl or hydroxy-1-4C-alkyl,

R2 is halogen, fluoro-1-4C-alkyl, 2-4C-alkenyl, 2-4C-alkynyl, carboxyl, cyano, 1-4C-alkoxycarbonyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkoxy-1-4C-alkyl, fluoro-1-4C-alkoxy-1-4C-alkyl, amino-1-4C-alkyl, mono- or di-1-4C-alkylamino-1-4C-alkyl, the radical Res-1-4C-alkyl or the radical -CO-NR31R32, where

Res is a imidazo, morpholino, aziridino, azetidino, pyrrolidino, pyrrolo, piperidino, piperazino or a with R30 substituted benzylamino radical and the radical Res is bonded via its nitrogen atom or one of its nitrogen atoms to the 1-4C-alkyl radical where

R30 is 1-4C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy, 2-4C-alkenyloxy, 1-4C-alkylcarbonyl, carboxy, 1-4C-alkoxycarbonyl, carboxy-1-4C-alkyl, 1-4C-alkoxycarbonyl-1-4C-alkyl, halogen or hydroxy,

R31 is hydrogen, hydroxyl, 1-7C-alkyl, hydroxy-1-4C-alkyl or 1-4C-alkoxy-1-4C-alkyl and

R32 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl or 1-4C-alkoxy-1-4C-alkyl,

or where

R31 and R32 together, including the nitrogen atom to which both are bonded, are a pyrrolidino, piperidino, piperazino, N-1-4C-alkylpiperazino, morpholino, aziridino or azetidino group,

Ar is one with R4, R5, R6 and R7 substituted mono- or bicyclic aromatic residue from the group of phenyl, naphthyl, pyrrolyl, pyrazolyl, imidazolyl, 1,2,3-triazolyl, indolyl, benzimidazolyl, furyl, benzofuryl, thienyl, benzothienyl, thiazolyl, isoxazolyl, pyridinyl, pyrimidinyl, chinolinyl and isochinolinyl,

wherein

R4 is hydrogen, 1-4C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy, halogen or fluoro-1-4C alkyl

R5 is hydrogen, 1-4C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy, halogen or fluoro-1-4C alkyl

R6 is hydrogen,

R7 is hydrogen,

with the proviso that R1 does not have the meaning hydrogen, 1-4C-alkyl or hydroxy-1-4C-alkyl when R2 has the meaning halogen or fluoro-1-4C-alkyl, and its salts.

3. A compound of the formula 1 as claimed in claim 1, in which

R1 1-4C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkyl-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, fluoro-1-4C-alkyl, hydroxy-1-4C alkyl,

R2 is carboxyl, 1-4C-alkoxycarbonyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkoxy-1-4C-alkyl, amino-1-4C-alkyl, mono- or di-1-4C-alkylamino-1-4C-alkyl, the radical Res-1-4C-alkyl or the radical -CO-NR31R32,

where

Res is a imidazo, morpholino, aziridino, azetidino, pyrrolidino, pyrrolo, piperidino or piperazino radical and the radical Res is bonded via its nitrogen atom or one of its nitrogen atoms to the 1-4C-alkyl radical

R31 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl or 1-4C-alkoxy-1-4C-alkyl,

R32 is hydrogen, 1-7C-alkyl or 1-4C-alkoxy-1-4C-alkyl,

Ar is one with R4, R5, R6 and R7 substituted monocyclic aromatic residue selected from the group of phenyl, pyridinyl, thiophenyl, furanyl and pyrrolyl, wherein

R4 is hydrogen, 1-4C-alkyl, halogen or fluoro-1-4C-alkyl,

R5 is hydrogen, 1-4C-alkyl, halogen or fluoro-1-4C-alkyl,

R6 is hydrogen

R7 is hydrogen

and its salts.

4. A compound of the formula 1 as claimed in claim 1, in which

R1 1-4C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkyl-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, fluoro-1-4C-alkyl, hydroxy-1-4C alkyl,

R2 is carboxyl, 1-4C-alkoxycarbonyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkoxy-1-4C-alkyl, amino-1-4C-alkyl, mono- or di-1-4C-alkylamino-1-4C-alkyl, the radical Res-1-4C-alkyl or the radical -CO-NR31R32,

where

Res is a imidazo, morpholino, aziridino, azetidino, pyrrolidino, pyrrolo, piperidino or piperazino radical and the radical Res is bonded via its nitrogen atom or one of its nitrogen atoms to the 1-4C-alkyl radical

R31 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl or 1-4C-alkoxy-1-4C-alkyl,

R32 is hydrogen, 1-7C-alkyl or 1-4C-alkoxy-1-4C-alkyl,

Ar is one with R4, R5, R6 and R7 substituted phenyl,
wherein

R4 is hydrogen or 1-4C-alkyl

R5 is hydrogen or 1-4C-alkyl

R6 is hydrogen

R7 is hydrogen

and its salts.

5. A compound of the formula 1 as claimed in claim 1,
in which

R1 1-4C-alkyl

R2 is carboxyl, 1-4C-alkoxycarbonyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkoxy-1-4C-alkyl, amino-1-4C-alkyl, mono- or di-1-4C-alkylamino-1-4C-alkyl, the radical Res-1-4C-alkyl or the radical -CO-NR31R32,

where

Res is a imidazo or morpholino radical and is bonded via its nitrogen atom or one of its nitrogen atoms to the 1-4C-alkyl radical

R31 is 1-4C-alkyl or 1-4C-alkoxy-1-4C-alkyl,

R32 is hydrogen, 1-4C-alkyl or 1-4C-alkoxy-1-4C-alkyl,

Ar is one with R4, R5, R6 and R7 substituted phenyl,
wherein

R4 is hydrogen or 1-4C-alkyl

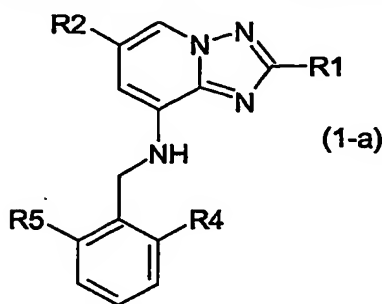
R5 is hydrogen or 1-4C-alkyl

R6 is hydrogen

R7 is hydrogen

and its salts.

6. A compound of the formula 1 as claimed in claim 1, characterized by the formula 1-a,



in which

- R1 is hydrogen, 1-4C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkyl-1-4C-alkyl, 1-4C-alkoxy, 1-4C-alkoxy-1-4C-alkyl, 1-4C-alkoxycarbonyl, 2-4C-alkenyl, 2-4C-alkynyl, fluoro-1-4C-alkyl or hydroxy-1-4C-alkyl,
- R2 is halogen, fluoro-1-4C-alkyl, 2-4C-alkenyl, 2-4C-alkynyl, carboxyl, cyano, 1-4C-alkoxycarbonyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkoxy-1-4C-alkyl, fluoro-1-4C-alkoxy-1-4C-alkyl, amino-1-4C-alkyl, mono- or di-1-4C-alkylamino-1-4C-alkyl, the radical Res-1-4C-alkyl or the radical -CO-NR31R32,

where

Res is a imidazo, morpholino, aziridino, azetidino, pyrrolidino, pyrrolo, piperidino, piperazino or a with R30 substituted benzylamino radical and the radical Res is bonded via its nitrogen atom or one of its nitrogen atoms to the 1-4C-alkyl radical

where

R30 is 1-4C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy, 2-4C-alkenyloxy, 1-4C-alkylcarbonyl, carboxy, 1-4C-alkoxycarbonyl, carboxy-1-4C-alkyl, 1-4C-alkoxycarbonyl-1-4C-alkyl, halogen or hydroxy,

R31 is hydrogen, hydroxyl, 1-7C-alkyl, hydroxy-1-4C-alkyl or 1-4C-alkoxy-1-4C-alkyl and

R32 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl or 1-4C-alkoxy-1-4C-alkyl,

or where

R31 and R32 together, including the nitrogen atom to which both are bonded, are a pyrrolidino, piperidino, piperazino, N-1-4C-alkylpiperazino, morpholino, aziridino or azetidino group,

R4 is hydrogen, 1-4C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy, halogen or fluoro-1-4C alkyl

R5 is hydrogen, 1-4C-alkyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy, halogen or fluoro-1-4C alkyl

with the proviso that R1 does not have the meaning hydrogen, 1-4C-alkyl or hydroxy-1-4C-alkyl when

R2 has the meaning halogen or fluoro-1-4C-alkyl,

and its salts.

7. A compound of the formula 1-a as claimed in claim 6,

in which

- R1 1-4C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkyl-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, fluoro-1-4C-alkyl, hydroxy-1-4C alkyl,

R2 is carboxyl, 1-4C-alkoxycarbonyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkoxy-1-4C-alkyl, amino-1-4C-alkyl, mono- or di-1-4C-alkylamino-1-4C-alkyl, the radical Res-1-4C-alkyl or the radical -CO-NR31R32,

where

Res is a imidazo, morpholino, aziridino, azetidino, pyrrolidino, pyrrolo, piperidino or piperazino radical and the radical Res is bonded via its nitrogen atom or one of its nitrogen atoms to the 1-4C-alkyl radical

R31 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl or 1-4C-alkoxy-1-4C-alkyl,

R32 is hydrogen, 1-7C-alkyl or 1-4C-alkoxy-1-4C-alkyl,

R4 is hydrogen, 1-4C-alkyl, halogen or fluoro-1-4C-alkyl,

R5 is hydrogen, 1-4C-alkyl, halogen or fluoro-1-4C-alkyl,

and its salts.

8. A compound of the formula 1-a as claimed in claim 6,

in which

R1 1-4C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkyl-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, fluoro-1-4C-alkyl, hydroxy-1-4C alkyl,

R2 is carboxyl, 1-4C-alkoxycarbonyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkoxy-1-4C-alkyl, amino-1-4C-alkyl, mono- or di-1-4C-alkylamino-1-4C-alkyl, the radical Res-1-4C-alkyl or the radical -CO-NR31R32,

where

Res is a imidazo, morpholino, aziridino, azetidino, pyrrolidino, pyrrolo, piperidino or piperazino radical and the radical Res is bonded via its nitrogen atom or one of its nitrogen atoms to the 1-4C-alkyl radical

R31 is hydrogen, 1-7C-alkyl, hydroxy-1-4C-alkyl or 1-4C-alkoxy-1-4C-alkyl,

R32 is hydrogen, 1-7C-alkyl or 1-4C-alkoxy-1-4C-alkyl,

R4 is hydrogen or 1-4C-alkyl

R5 is hydrogen or 1-4C-alkyl

and its salts.

9. A compound of the formula 1-a as claimed in claim 6,

in which

R1 1-4C-alkyl

R2 is carboxyl, 1-4C-alkoxycarbonyl, hydroxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, 1-4C-alkoxy-1-4C-alkoxy-1-4C-alkyl, amino-1-4C-alkyl, mono- or di-1-4C-alkylamino-1-4C-alkyl, the radical Res-1-4C-alkyl or the radical -CO-NR31R32,

where

Res is a imidazo or morpholino radical and is bonded via its nitrogen atom or one of its nitrogen atoms to the 1-4C-alkyl radical

R31 is 1-4C-alkyl or 1-4C-alkoxy-1-4C-alkyl,

R32 is hydrogen, 1-4C-alkyl or 1-4C-alkoxy-1-4C-alkyl,
R4 is hydrogen or 1-4C-alkyl
R5 is hydrogen or 1-4C-alkyl
and its salts.

10. A medicament comprising a compound as claimed in claim 1 and/or a pharmacologically acceptable salt thereof together with customary pharmaceutical auxiliaries and/or excipients.

11. The use of a compound as claimed in claim 1 and its pharmacologically acceptable salts for the prevention and treatment of gastrointestinal disorders.